

## SEQUENCE LISTING

### (1) GENERAL INFORMATION

- (i) APPLICANT:
- (ii) TITLE OF INVENTION
- (iii) NUMBER OF SEQUENCES
- (iv) CORRESPONDENCE ADDRESS
- (v) COMPUTER READABLE FORM
  - (A) MEDIUM TYPE: Floppy Disk
  - (B) COMPUTER: IBM PC Compatible
  - (C) OPERATING SYSTEM: MS-DOS
  - (D) SOFTWARE: Microsoft Word
- (vi) CURRENT APPLICATION DATA
- (vii) ATTORNEY / AGENT INFORMATION
- (viii) TELECOMMUNICATION INFORMATION

### (2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS
  - (A) LENGTH: 8
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
  - (A) NAME / KEY : Modified site
  - (B) LOCATION: 1
  - (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:
  - (A) NAME / KEY : Modified site
  - (B) LOCATION: 2
  - (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:
  - (A) NAME / KEY : Modified site
  - (B) LOCATION: 3
  - (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:
  - (A) NAME / KEY : Modified site
  - (B) LOCATION: 4
  - (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:
  - (A) NAME / KEY : Modified site

- (B) LOCATION: 5  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 8  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO :1:  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa β-Ala  
 1 5 8
- (2) INFORMATION FOR SEQ ID NO:2:  
 (i) SEQUENCE CHARACTERISTICS  
 (A) LENGTH: 8  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: Unknown  
 (iii) MOLECULE TYPE: peptide  
 (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 3  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 4  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 5  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 8  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO :2:
- |     |     |     |     |     |     |     |     |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | β-Ala |
| 1   |     |     |     |     | 5   |     |     |     | 8   |       |

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS  
 (A) LENGTH:  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: Unknown
- (iv) MOLECULE TYPE: peptide
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:

- (A) NAME / KEY : Modified site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 3  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 4  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 5  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 8  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO :3:
- |     |     |     |     |     |     |     |     |     |       |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | Xaa | β-Ala |
| 1   |     |     |     |     | 5   |     |     | 8   |       |
- (2) INFORMATION FOR SEQ ID NO:4:
- (i) SEQUENCE CHARACTERISTICS  
 (A) LENGTH: 8  
 (B) TYPE: amino acid

- (C) STRANDEDNESS: single  
 (D) TOPOLOGY: Unknown
- (v) MOLECULE TYPE: peptide
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 3  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 4  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 5  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 8  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = “Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine.”

(xi) SEQUENCE DESCRIPTION: SEQ ID NO :4:

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	β-Ala
1					5			8	

(2) INFORMATION FOR SEQ ID NO:5:

### (i) SEQUENCE CHARACTERISTICS

(A) LENGTH: 8

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 1

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = “Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle.”

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 2

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) **FEATURE:**

(A) NAME / KEY : Modified site

(B) LOCATION: 3

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 4

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 5

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) **FEATURE:**

(A) NAME / KEY : Modified site

(B) LOCATION: 6

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 8  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO :2:

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	β-Ala
1					5			8	

- (2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS

- (A) LENGTH: 12  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: Unknown

- (vi) MOLECULE TYPE: peptide

- (ix) FEATURE:

- (A) NAME / KEY : Modified site  
 (B) LOCATION: 1  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

- (ix) FEATURE:

- (A) NAME / KEY : Modified site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

- (ix) FEATURE:

- (A) NAME / KEY : Modified site  
 (B) LOCATION: 3  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

- (ix) FEATURE:

- (A) NAME / KEY : Modified site  
 (B) LOCATION: 4  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

- (ix) FEATURE:

- (A) NAME / KEY : Modified site

000260"44T9960

- (B) LOCATION: 5  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 6  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."
- (ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 7  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 8  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 9  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."
- (ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 10  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 11  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."
- (ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 12  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO :6:  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa-β-Ala  
1 5 10



(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS

- (A) LENGTH: 12
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: Unknown

(vii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME / KEY : Modified site
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

- (A) NAME / KEY : Modified site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

- (A) NAME / KEY : Modified site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

- (A) NAME / KEY : Modified site
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

- (A) NAME / KEY : Modified site
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

- (A) NAME / KEY : Modified site
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

- (A) NAME / KEY : Modified site
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 8

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 9

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 10

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 11

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 12

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO :6:

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa-β-Ala
1				5						10		

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH: 12

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 1

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 2

- (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Adenine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N9 of the adenine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 3  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 4  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Adenine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N9 of the adenine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 5  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 8  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Adenine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N9 of the adenine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 9  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 10  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Adenine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N9 of the adenine."

(ix)      FEATURE:  
           (A) NAME / KEY : Modified site  
           (B) LOCATION: 11  
           (D) OTHER INFORMATION: /label = MODIFIED-SITE  
                       /note = “ Thymine heterocycle is attached at C4 of N1-(2-aminoethyl)  
                                 proline through position N1 of the thymine.”

(ix)      FEATURE:  
           (A) NAME / KEY : Modified site  
           (B) LOCATION: 12  
           (D) OTHER INFORMATION: /label = MODIFIED-SITE  
                       /note = “ Thymine heterocycle is attached to N1-(2-aminoethyl)  
                                 proline at C4 of proline through position 1 of the heterocycle.”

(xi)      SEQUENCE DESCRIPTION: SEQ ID NO :9:

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	β-ala
1				5							10	

- 28

note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 6

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Cytosine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the cytosine."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 7

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 8

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Adenine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N9 of the adenine."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 9

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 10

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = "Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 11

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 12

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = "Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 13

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) **FEATURE:**  
**(A) NAME / KEY :** Modified site  
**(B) LOCATION:** 14  
**(D) OTHER INFORMATION:** /label = MODIFIED-SITE  
 note = “ Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle.”

(ix) **FEATURE:**  
**(A) NAME / KEY :** Modified site  
**(B) LOCATION:** 15  
**(D) OTHER INFORMATION:** /label = MODIFIED-SITE  
 note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO :10:										
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
Xaa β-ala										
1				5						10

INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS  
(A) LENGTH: 12  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:  
(A) NAME / KEY : Modified site  
(B) LOCATION: 1  
(D) OTHER INFORMATION: /label = MODIFIED-SITE  
note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) **FEATURE:**  
**(A) NAME / KEY :** Modified site  
**(B) LOCATION:** 2  
**(D) OTHER INFORMATION:** /label = MODIFIED-SITE  
 note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) **FEATURE:**  
 (A) **NAME / KEY :** Modified site  
 (B) **LOCATION:** 3  
 (D) **OTHER INFORMATION:** /label = MODIFIED-SITE  
       note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."  
 (A) **NAME / KEY :** Modified site  
 (B) **LOCATION:** 4  
 (D) **OTHER INFORMATION:** /label = MODIFIED-SITE  
       /note = "Guanine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N9 of the guanine."

(ix) **FEATURE:**

- (A) NAME / KEY : Modified site  
 (B) LOCATION: 5  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Guanine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the guanine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 8  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 /note = "Adenine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N9 of the adenine."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 9  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 10  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 note = " Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 11  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 12  
 (D) OTHER INFORMATION: /label = MODIFIED-SITE  
 note = "Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."
- (ix) FEATURE:  
 (A) NAME / KEY : Modified site  
 (B) LOCATION: 13

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 14

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 15

(D) OTHER INFORMATION: /label = MODIFIED-SITE

note = " Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO :10:

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
		Xaa	β-ala							
1					5					10

INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH: 10

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 1

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Guanine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 2

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 3

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 4



(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Guanine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 5

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 6

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 7

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 8

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 7 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 9

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 10

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the thymine."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO :12:

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	β-Ala
1					5				8			

INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH: 10

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 1

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Guanine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 2

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 3

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 4

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Guanine heterocycle is attached at C4 of N1-(2-aminoethyl) proline through position N1 of the guanine."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 5

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 9 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 6

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 7

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 8

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Adenine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 7 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 9

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = " Cytosine heterocycle is attached to N-acetyl (2-aminoethyl) glycine through the N-acetyl group at position 1 of the heterocycle."

(ix) FEATURE:

(A) NAME / KEY : Modified site

(B) LOCATION: 10

(D) OTHER INFORMATION: /label = MODIFIED-SITE

/note = "Thymine heterocycle is attached to N-acetyl (2-aminoethyl) , glycine through the N-acetyl group at position 1 of the heterocycle."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO :2:

Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	β-Ala
1					5				8			